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ABSTRACT

A preliminary investigation was conducted into the possible use of peer tutoring in the distance education environment at Athabasca University. In a pilot study a single peer tutor was assigned tutoring duties in English 210 (Introduction to Literary Forms and Techniques) for a six-month period. Ten new students starting classes in October were randomly assigned to the tutor. The performance levels were not found to be significantly different between the peer tutor learners and other learners. Nor did the performance of the peer tutor differ significantly from that of other tutors. Of considerable interest were the negative reactions of staff to even an investigation of peer tutoring. Staff feared replacement of regular tutoring by peer tutoring would be viewed as nonprofessional and discredit the university. Some tutors felt the university was unappreciative of their contributions. Two concerns with peer tutoring in distance education were its connection in the literature with the Personalized System of Instruction and lack of evidence that tutoring is effective. Questions regarding the importance and role of tutoring in distance education seemed to supercede the need to investigate alternative methods for providing tutoring services. (YLB)

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Project REDEAL

Exploring the Effects of Peer Tutoring in Distance Education

Dan O Coldeway

REDEAL Research Report #3

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Abstract

Peer tutoring has been demonstrated to be an effective alternative for instructional delivery in higher education. The present study was a preliminary investigation into the possible use of peer tutoring in the distance educational environment at Athabasca University. In a pilot study a single peer tutor was assigned tutoring duties for a six month period. Data on the effectiveness and perceptions of the peer tutor were collected in addition to information related to the institution's perceptions of the peer tutor concept. A discussion of peer tutoring in distance education and tutoring in general is presented.

Exploring the Effects of Peer Tutoring in Distance Education

The concept of tutoring in distance educational delivery has been identified as important by many authors and institutions (Baath and Wangdahl, 1976; Holmberg, 1974). Most distance delivery systems utilize some form of tutoring in their efforts to assist learners and encourage them to progress through materials.

The tutorial function can take many forms. Face-face-tutorials, group tutorials, and telephone tutorials, represent a sample of the range of alternative tutorial functions employed in distance education. The types of persons serving as tutors can also vary considerably. Some institutions use tutors who are qualified in the content area represented by the course they are tutoring (e.g. the Open University). Others prefer tutors who can handle a variety of courses, even those courses not representative of the tutors' academic qualifications (e.g. North Island College). It is also possible to use part-time tutors (e.g. Athabasca University), full-time tutors (e.g. the Open Learning Institute), and variations in between.

One type of tutor which has achieved a large degree of success in higher education is the peer tutor. Peer tutors (usually called proctors) have been used extensively in Keller's Personalized System of Instruction (Keller, 1966) and the audio-tutorial approach (Postlethwait, 1966). A large body of research literature on the effect, role, and importance of peer tutors within PSI and the audio-tutorial approach has emerged (Johnson, 1975).

The peer tutor has also been employed extensively outside of PSI. The OASIS peer tutoring program at the University of California at San Diego provides an excellent example of such an application at the university level (Shreve, et. al., 1976). The success of the OASIS program clearly points to the importance of peer tutors as a resource for higher education.

Reports on the results of peer tutoring in the community college setting (Beck, 1978; Kerst[illegible]s, 1976), the effect on disadvantaged students (Ross, 1972; Reed, 1974; Patterson, 1976), and the development and rationale for peer tutoring programs (Callender, 1973; Wynn, 1974; Hayes, 1978) also indicate the potential peer tutors represent for higher education.

Peer tutoring has also received enormous attention in elementary and secondary education (Conrad, 1976). Both the research literature and practical experience literature points to the effectiveness of peer tutors in dealing with both normal and exceptional students (Klaus, 1973; Jorgensen, 1978; Hoffman, 1977).

Although peer tutoring has been demonstrated to be effective along several important academic and administrative dimensions (e.g. learning effectiveness, administrative effectiveness, cost effectiveness, etc.) the concept of peer tutoring has not received much attention in the distance education literature. Most distance education and correspondence institutions have selected tutors from either the community of professionals within and/or outside of the institution, rather than drawing upon the learner population as a resource.

The present study represents an attempt to determine if the concept of peer tutoring can be utilized effectively in the distance educational environment at Athabasca University. The Athabasca University instructional setting appears ideal for the possibility of peer tutoring for the following reasons: first, learners who successfully complete courses at Athabasca University are likely in a good position to understand what it takes to be a successful distance learner and therefore better understand the problems fellow learners may be facing. Second, peer tutors who have completed the course they tutor would not have to spend large amounts of time studying the course in order to know it in detail. Third, peer tutors can be compensated for serving in that capacity in ways other than pay. The possibility of using course credit or small stipends would represent a considerable cost savings. Finally, many peer tutors have reported that they learned more when tutoring the course than they did when taking it. Moreover, the opportunity to involve distance learners with the host institution may have other advantages worthy of consideration.

Method

Selection of Peer Tutors

Two Athabasca University learners were selected to serve as peer tutors, one in each of two courses. Both peer tutors had successfully completed the course they were to tutor and had received better than average marks. Both tutors had also taken other Athabasca University courses and had successfully completed them with better than average marks.

Both potential peer tutors were interviewed by the project director and given oral and written descriptions of their duties and responsibilities. They were defined as follows:

a) peer tutors would have a maximum of 10 students each;

b) peer tutors would serve in the same capacity as other Athabasca University tutors by:

   i) setting up tutoring evenings during which their students could contact them by telephone

   ii) keeping records on students' activity and performance

   iii) submitting information to the course coordinator as required

   iv) doing assignment marking as required (with back-up assistance from the course coordinator;

c) peer tutors would receive a $100 honorarium rather than being paid as other tutors are paid ($7.50 per month/student);

d) peer tutors would participate as tutors from October 1, 1979 through May, 1980;

e) peer tutors would be invited to participate in any regularly scheduled Athabasca University tutor orientation and/or training sessions.

Because of problems encountered with the Social Science department regarding the use of peer tutors, one peer tutor eventually withdrew from the experiment prior to beginning tutorial duties. The sample of peer tutors was therefore reduced to a single tutor serving in English 210 (Introduction to Literary Forms and Techniques).

Assignment of Students

The single peer tutor was randomly assigned ten new October start date students registered in English 210. An analysis of the student profiles for the ten students assigned to the peer tutor in comparison to students assigned to other English 210 tutors revealed no major differences.[1] Based on this analysis, the peer tutor's cohort of students appeared equivalent to the student cohort for other tutors.

The Management of the Peer Tutor

The peer tutor reported directly to the English 210 course coordinator. The course coordinator also provided back-up essay marking assistance.

All long-distance phone bills resulting from peer tutoring activity were paid by the university. The project director received monthly phone bills and processed them for the peer tutor (a similar procedure to the one used for regular tutors). No discussion or assistance with tutor-related problems was provided by the project director.

Results

Learner Performance

A summary of the performance levels of the learners assigned to the peer tutor in comparison to the performance levels of all other English 210 learners is shown in Table 1. The performance levels, defined as percentage of learners taking an exam, average mark on exams, and average

time from start of course to exam, were not found to be significantly different between the peer tutor learners and other learners.

Insert Table 1 about here

Peer Tutor Performance

The performance of the peer tutor was not significantly different from the typical performance levels of other tutors. The peer tutor was able to perform all required academic, administrative and interpersonal dimensions of tutoring on a regular basis throughout the experiment. The problems reported by the peer tutor as troublesome (e.g. getting in touch with the students, dealing with individual students with unique problems, etc.) were not problems atypical of tutoring in general.

Perceptions of the Peer Tutor

Comments and opinions representing the perceptions of th peer tutor toward the peer tutoring role were obtained in an interview conducted immediately following the end of the experiment. Table 2 summarizes some of the peer tutor's comments. In general, the peer tutor felt good about serving as a tutor and appeared to enjoy the experience. Although the tutor reported "worrying a bit" about her own ability and how students perceived the support they were getting, she felt she was able to help even "problem students".

Insert Table 2 about here

Discussion

The results of this very limited pilot project and venture into peer tutoring provide little in the way of evidence regarding the effects and issues surrounding peer tutoring. Almost of greater interest than the specific results obtained from the peer tutor or her learners, were the responses toward the concept of peer tutoring research at Athabasca University.

At the peer tutoring proposal development phase, a fairly comprehensive peer tutoring research program was the goal. Given the sizeable literature pointing to the positive results obtained from peer tutoring in a variety of educational settings (Johnson, 1975; Shreve, 1976) such a program of research in the distance educational setting seemed warranted. However, the negative reactions of staff to even an investigation into peer tutoring is of considerable interest.

At the heart of the staff resistance to peer tutoring are concerns for the preservation of "regular, part-time tutors," and their perceived need for "professional" tutors who have corresponding degree credentials. Even though the stated goal of the proposed peer tutoring research program clearly indicated that an objective examination to determine if and how peer tutors functioned and performed would occur, a large number of

staff indicated that they were not in favor of even experimenting with peer tutoring and had little interest in the results. They also expressed concern that if and when peer tutoring was found to be more and/or equally as effective as regular tutoring, the regular tutoring system would be eliminated by university administration in an effort to reduce costs. The replacement peer tutoring system, even though potentially as effective, would be viewed by students and others as non-professional and therefore discredit the university.

Tutors at Athabasca University felt the need to comment about the negative effects of the peer tutoring concept. In one particular case a tutor wrote to the university expressing the sentiment that the university was unappreciative of his contribution and used the peer tutoring experiment as evidence to support that case. That tutor felt that even researching peer tutoring indicated that the university placed little value on that tutor's "learning, knowledge, and experience" gained over the years.

The argument against peer tutoring can be viewed under two distinctly different lights. First, the argument against peer tutoring research appears justified when one notices tha the regular tutoring system has not been evaluated carefully. Moreover, attempts to improve that system, train tutors more effectively, and manage tutors more efficiently, were just beginning. Drawing attention to a new tutoring mechanism at a time when the existing system was just getting attention, could be viewed as problematical.

In contrast, the argument against peer tutoring research perhaps begs a more important question related to the effectiveness of distance

education and Athabasca University. That question is, "What variables and procedures are most effective in reaching distance learners given the financial and technological limitations of the institution?" Given that peer tutors have proven to be effective in various aspects of university level education and that they could become an extremely potent and low cost resource in distance education, exploring that potential appears warranted, perhaps even desirable.

Determining which of the above arguments is most valid is difficult, if not impossible to do. However, it is clear that the reduction of the size and complexity of the peer tutoring research program, a direct effect of staff reaction and behavior toward the proposal program, is an effect worth noting.

Given the limited data now available on a single peer tutor dealing with only 10 students, the question of initiating further research efforts into peer tutoring at Athabasca University again emerges. Because the results indicate that the particular peer tutor selected was as effective as other tutors on important indices, the question of furthering research into peer tutoring should again be considered. Perhaps this time the institution will have more information on the regular tutoring system and will have matured to a point at which reasonable alternatives can be explored. The existing data contained in this report, together with the literature on peer tutoring, point to the potential peer tutors represent for distance education.

In reviewing the literature surrounding the peer tutoring concept, and in considering its potential for distance educational

delivery, two general concerns arise. First, and perhaps most interesting, is that the large bulk of the peer tutoring literature is directly connected with the Personalized System of Instruction (Keller, 1966). Although learner peers are clearly an important component of PSI, they are rarely referred to as tutors, but instead are called proctors. Although this may appear upon first examination to be only a semantic difference, closer examination points out that it is probably an important difference. That is, the peer proctor in the PSI system is one of five major PSI components which are integrally linked to serve the criterion-referenced instructional model, which is the philosophical basis of PSI. In contrast, the general notion of tutoring is that it is a service to learners who may require assistance. Tutoring, even tutoring at Athabasca University where a regular instructor is not present, is not integrally linked to other instructional components in a "system of instruction" like PSI. Therefore, proctoring and tutoring, although they share many features, are distinctly different roles. Proctors in the PSI sense, generally serve the learner in the following way:

a. grading criterion-referenced quizzes and/or assignments;
b. giving feedback to learners on quizzes and assignments;
c. keeping individual records of learner progress as reflected in the learner's mastery of quizzes and assignments;
d. periodically answering learner's questions on material identified as important for upcoming quizzes and assignments.

The above functions operate in PSI to allow the learner continual feedback on learning progress, require that mastery is achieved at all times, and allow for individual rate of progress through the course.

In contrast, the tutoring role may be characterized by the following functions:

a. encouraging learners to progress through the course;

b. discussing course materials with learners;

c. helping learners interpret the results of quizzes, examinations, and assignments;

d. explaining difficult concepts to learners;

e. keeping records of amounts of contact with learners and scores on examinations and assignments;

f. grading assignments and/or examinations.

Although these functions sound similar to the functions of the PSI proctor, they are less structured and less integrated into the overall instructional management system of the course. For example, a given learner could elect not to use the tutor to progress through a course. Such a decision would be virtually impossible with PSI.

A second major concern regarding peer tutoring related directly to the tutoring concept in distance education. Although the tutor has emerged as an important component in distance education (Baath & Wangdahl, 1976) there is little empirical evidence that tutoring is effective, is worth the cost, etc. Even authors espousing the importance of tutoring rarely cite research identifying the skills required of the tutor, the number of learners a tutor can handle, etc. In general, we

know very little about tutoring in distance education, although testimonials to the importance and effectiveness of tutoring are easily referenced (Childs, 1957; Stein, 1960; Harper, 1971, and; Wedemeyer, 1971).

The term "tutoring" may be entirely inappropriate to describe the role of the distance education tutor. That is, a tutor in the traditional use of the term serves a completely different role. Traditionally, tutors are used to "coach" learners, who for whatever reason, cannot or are not learning from the course. Tutors usually serve a very small number of learners and offer assistance if and when learners need assistance. They are rarely available to more than a select number of learners (i.e. those who desperately need tutoring or those who can afford the luxury). In contrast, the distance tutoring concept, as described earlier, begins to resemble more of an instructor role. That is, the distance education tutor is often assigned to large numbers of learners (e.g. 25 or more at Athabasca University) whether those learners need tutoring or not. As a result, learners do not receive the type of intensive "coaching" representative of traditional tutoring. Tutors in many distance educational institutions are selected much like instructors, the selection being made on the academic qualifications of the person. Most important, the distance educational tutor is often a "given" for all distance delivered courses. Tutoring is used regardless of the course content, complexity, or demonstrated learner need.

The expressed concerns and misgivings about appropriateness of peer tutors (independent of their effectiveness) point to the general

problem of the distance educational paradigm. That is, there appear to be concerns about the distance teaching-learning function that do not focus on learner effectiveness. The academic qualifications of tutors, as measured by their formal degree credentials and teaching experience, is one example.

In order to understand the relationship between the tutor and the distance educational paradigm it is important to look at the distance educational problem in total. For the purposes of this argument, the problem can be summarized as follows:

> Citizens of a particular geographical and political region (in this case, the Province of Alberta, Canada), who for whatever reason cannot attend existing institutions of higher education (e.g. job responsibilities, no institution nearby, etc.) require eduational opportunity. Because requiring them to be in a fixed place at a fixed time reduces that opportunity, offering them the opportunity to study at their own choice of location when they so desire appears to be the ideal solution. The problem, therefore, is how to provide that opportunity.

The most popular solution to the above problem can be summarized as follows:

> Provide the same type of educational programs and courses available at other institutions in the region, using

format which does not require that the learner be in a particular place at a particular time. This is usually accomplished to a large degree by converting the traditional course (i.e. books, assignments, lectures, exams, etc.) into a "package" of written and sometimes multi-mediated materials which is sent to the learner (i.e. the correspondence model).

So far, concerns over tutoring have not yet entered the picture. Moreover, if a majority of learners who were sent the "packages" completed them successfully, concerns over tutoring may never enter the picture. Unfortunately, for a wide variety of reasons, many not understood as yet, a large majority of the learners who are sent packages do not complete them successfully.

In response to the apparent drawbacks of the correspondence model, a new model was put into place by a variety of institutions. This new model, most often referred to as the distance educational model, expands upon the corrsespondence model in a unique way, by adding the tutor. Now, not only are tutors sent a course "package", they are also assigned to a tutor.

Although giving the learner someone who can help him/her better understand the material (instructional improvement) and encourage him/her to continue working (motivational improvement) has almost immediate intuitive appeal, such a decision is based upon two important assumptions, which if proved incorrect, may produce more difficulties. They are:

a. That a majority of learners who do not have success

were unsuccessful because they did not have someone to help them better understand the material and modifying the material to make it easier to understand would not solve the problem.

b. That a majority of learners with motivational problems can be helped by having tutors encourage them to progress and complete packages.

If one or both of the above assumptions are valid, questions regarding the skills, responsibilities and attitudes of tutors become relevant. It seems highly unlikely almost anyone with a degree, even anyone with an advanced degree, in the content area representative of the course package, will be capable of improving learner success through tutoring. Moreover, because the original assumption was that the course package could "stand alone", questions regarding the contributions of the tutor in relationship to the course package must be addressed. In the PSI model discussed earlier, the relationship between the proctor's role and the design of the course materials is an important attribute of PSI effectiveness. Given that design, the issue of proctor skills, credentials, and experience can be addressed directly. As a result, the peer proctor is clearly a reasonable choice.

In the distance educational situation it is painfully clear that the course package design and the tutoring requirements have not been carefully integrated. Tutoring can therefore take many forms and shapes as course content and learners vary. Questions about learner

effectiveness become lost as variables such as tutoring get added to the distance delivery equation without a clear understanding of their contribution to the learner effectiveness equation. The politics of tutoring (i.e. institutional credibility by having Ph.D.-level tutors) override concerns regarding learner effectiveness. As the present study has revealed, even asking questions about the possible effects of a different type of tutor (the peer tutor) is made difficult.

In summary, although a careful investigation into peer tutoring was not possible with the effort reported in this paper, attempting to engage in such a research program has raised several questions about tutoring in general. Questions regarding the importance of, and role of, tutoring in distance education may supercede the need to investigate alternative methods for providing tutorial services to learners. However, investigations into tutoring must continue in an effort to understand the overall instructional and motivational needs of the distance learner.

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Footnote

[1]This information was obtained from the computerized individual student record obtained at the time of original student enrollment at Athabasca University.

Table 1

Performance Levels in the First Three Credits for Learners

Assigned to the Peer Tutor in Comparison to All Other Learners in English 210

	Peer Tutor N = 10	All Other Tutors N = 67
Learner enrolled for credits	3 credits = 2 6 credits = 8	3 credits = 13 6 credits = 54
Performance		
Credit #1		
Learners taking exam	5 of 10 (50%)	34 of 67 (51%)
Average mark	74.8	76.0
Average time to exam	86.4 days	85.6
Credit #2		
Learners taking exam	3 of 10 (30%)	26 of 67 (39%)
Average mark	75.3	80.5
Average time to exam	126.0 days	152.4 days
Credit #3		
Learners taking exam	3 of 10 (30%)	18 of 67 (27%)
Average mark	78.3	81.3
Average time to exam	193.3 days	198.7 days

Table 2

A Selection of Comments Made by the Peer Tutor During the Post-Experiment Interview

Note: These are paraphrased comments.

a) *I worried a lot about the students' perceptions of the quality of support I could give them, especially if I graded papers.*

b) *I worried about one student in particular; that student was afraid of exams and I found the student hard to talk to on the phone. I recommended that the student see a counsellor.*

c) *I didn't know whether to tell students that I was also a student (a peer tutor).*

d) *My biggest problem was getting in touch with students.*

e) *The highlight of being a peer tutor was:*

   i) *seeing a student's composition of two short stories; the same ones I compared when I took the course*

   ii) *reading a good short story by a student that eventually got published in ERGO (the student newspaper).*

f) *The worst part was being on the phone with "stupid people". It was hard to talk to some students.*

g) *I viewed my role as generally providing moral support to students.*